

## TRAITE DE COOPERATION EN MATIERE DE BREVETS

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10/533536

## RAPPORT D'EXAMEN PRELIMINAIRE INTERNATIONAL

(article 36 et règle 70 du PCT)

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Référence du dossier du déposant ou du mandataire	<b>POUR SUITE A DONNER</b> voir la notification de transmission du rapport d'examen préliminaire international (formulaire PCT/PEA/416)	
Demande internationale No. PCT/FR 02/3816	Date du dépôt international (jour/mois/année) 07.11.2002	Date de priorité (jour/mois/année) 07.11.2002
Classification internationale des brevets (CIB) ou à la fois classification nationale et CIB C03C17/36		
Déposant SAINT-GOBAIN GLASS FRANCE et al.		

1. Le présent rapport d'examen préliminaire international, établi par l'administration chargée de l'examen préliminaire international, est transmis au déposant conformément à l'article 36.
2. Ce RAPPORT comprend 5 feuilles, y compris la présente feuille de couverture.
- ☐ Il est accompagné d'ANNEXES, c'est-à-dire de feuilles de la description, des revendications ou des dessins qui ont été modifiées et qui servent de base au présent rapport ou de feuilles contenant des rectifications faites auprès de l'administration chargée de l'examen préliminaire international (voir la règle 70.16 et l'instruction 607 des Instructions administratives du PCT).
- Ces annexes comprennent feuilles.

3. Le présent rapport contient des indications et les pages correspondantes relatives aux points suivants :

- I ☒ Base de l'opinion
- II ☐ Priorité
- III ☐ Absence de formulation d'opinion quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle
- IV ☐ Absence d'unité de l'invention
- V ☒ Déclaration motivée selon la règle 66.2(a)(ii) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration
- VI ☐ Certains documents cités
- VII ☐ Irrégularités dans la demande internationale
- VIII ☐ Observations relatives à la demande internationale

Date de présentation de la demande d'examen préliminaire internationale 05.01.2004	Date d'achèvement du présent rapport 19.08.2004
Nom et adresse postale de l'administration chargée de l'examen préliminaire international  Office européen des brevets D-80298 Munich Tél. +49 89 2399 - 0 Tx: 523656 epmu d Fax: +49 89 2399 - 4465	Fonctionnaire autorisé Maurer, R N° de téléphone +49 89 2399-8578 

## PCT/FR 02/03816

## Formulaire PCT/PEA/409 (janvier 2004)

**RAPPORT D'EXAMEN  
PRÉLIMINAIRE INTERNATIONAL**

Demande internationale n°

PCT/FR 02/03816

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6. Observations complémentaires, le cas échéant :

**V. Déclaration motivée selon l'article 35(2) quant à la nouveauté, l'activité inventive et la possibilité d'application industrielle; citations et explications à l'appui de cette déclaration**

1. Déclaration

Nouveauté

Oui: Revendications

Non: Revendications 1,6,7,12 non

Activité inventive

Oui: Revendications

Non: Revendications 1-12 non

Possibilité d'application industrielle

Oui: Revendications 1-12 oui

Non: Revendications

2. Citations et explications

**voir feuille séparée**

**POINT V:**

1) Il est fait référence aux documents suivants:

- D1: EP-A-0894774
- D2: EP-A-0548971
- D3: EP-A-0488048
- D4: EP-A-0304234
- D5: EP-A-0751099

2) Article 33(2) PCT:

Les documents suivantes divulguent un système de couches à faible pouvoir émissif à fonction d'isolation thermique et/ou de systèmes de ce genre ayant une fonction de protection solaire caractérisé par

au moins un couche fonctionnelle (Ag) et au moins un couche d'oxydes mixtes (low E film) comprenant

dans D1 (page 2, lignes 29-39 et 54-58; revendications 1-11) ZnO comprenant Ga ou Al, ou comprenant Zn<sub>2</sub>TiO<sub>4</sub>;

dans D2 (page 5, lignes 4-25, table 4; exemples 1-3; revendications 1, 6,7,14) ZnO comprenant Ti et Ga;

dans D3 (page 7, lignes 7-22; revendications 1-7).

Les revendications 1,6,7 et 12 ne remplissent pas les conditions énoncées dans l'article 33(2) PCT.

3) Activité inventive

Le document D4 (page 2, ligne 34-page 3, ligne 49; page 4, lignes 3-7; revendications 1-10) ) ZnO comprenant Ti comme Zn<sub>2</sub>TiO<sub>4</sub>.

De D4 donc diffère celui qui fait l'objet de la revendication 1 de la présente demande en ce qu' il contient les oxydes supplémentaire (Al<sub>2</sub>O<sub>3</sub>,Ga<sub>2</sub>O<sub>3</sub>,Sb<sub>2</sub>O<sub>3</sub>).

Des systèmes des couches comprenant ZnO<sub>2</sub> en combinaison avec Al,Ga et/ou Ti est divulgué dans D5 (page 3, lignes 18-19; page 4, lignes 31-50; page 5, lignes 40-41; revendications 1-11) .

L'homme du métier qui veut augmenter la capacité de résistance mécanique et chimique d'un système de couches à faible pouvoir émissif, considérerait les objets et

surtout les compositions des couches connu de D4 et de D5 ( et aussi de D1-D3).

Cette caractéristique- les oxydes supplémentaire (Al<sub>2</sub>O<sub>3</sub>, Ga<sub>2</sub>O<sub>3</sub>, Sb<sub>2</sub>O<sub>3</sub>)-, vue de D1-D5, est seulement une des possibilités que la personne du métier pourrait choisir, selon le cas d'espèce, parmi plusieurs possibilités évidentes, pour résoudre le problème posé sans qu'une activité inventive soit impliquée.

La revendication 1 n'implique pas conséquent d'activité inventive (Article 33(3) PCT).  
Certains documents publiés (règle 70.10)

Les revendications 2-11 dépendent de la revendication 1 et la revendication 12 aussi ne satisfont donc également pas aux conditions requises par le PCT en ce qui concerne l'activité inventive.

#### 4) Article 6 PCT

Il ressort clairement des pages de la description 3-5 , l'objet fondamentale de l'invention, que les caractéristiques suivantes sont essentielles à la définition de l'invention (durété, résistance chimique, d'éviter des difficultés lors du processus de sputtering d'alliages Zn-Ti) :

Le système de couches pour substrats transparents selon la revendication ne contiens pas les caractéristiques essentielles suivantes:

- La composition de la couche fonctionnelle
- la composition et le rapport de ZnO/TiO<sub>2</sub> dans la couche d'oxyde mixtes,
- la composition et la proportion des oxydes Al<sub>2</sub>O<sub>3</sub>, Ga<sub>2</sub>O<sub>3</sub> et/ou Sb<sub>2</sub>O<sub>3</sub> dans la couche oxyde supplémentaire,
- la structure de couches,
- l'épaisseur des couches,
- la composition de l'alliage-cible métallique.

La revendication indépendante 1 ne contenant pas ces caractéristiques, ne remplit pas la condition visée à l'Article 6 PCT en combinaison avec la règle 6.3 b) PCT, qui prévoient qu'une revendication indépendante doit contenir toutes les caractéristiques techniques essentielles à la définition de l'invention.

PATENT COOPERATION TREATY



Translation

PCT

10/533536

## INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference EC2001078PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/FR2002/003816	International filing date (day/month/year) 07 novembre 2002 (07.11.2002)	Priority date (day/month/year)
International Patent Classification (IPC) or national classification and IPC C03C 17/36, 17/34, C23C 14/18		
Applicant SAINT-GOBAIN GLASS FRANCE		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.

2. This REPORT consists of a total of 5 sheets, including this cover sheet.

☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of \_\_\_\_\_ sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 05 janvier 2004 (05.01.2004)	Date of completion of this report 19 August 2004 (19.08.2004)
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/FR2002/003816

## I. Basis of the report

### 1. With regard to the elements of the international application:\*

- ☐ the international application as originally filed
- ☒ the description:  
 pages \_\_\_\_\_ 1-10 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☒ the claims:  
 pages \_\_\_\_\_ 1-12 \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, as amended (together with any statement under Article 19  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the drawings:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_
- ☐ the sequence listing part of the description:  
 pages \_\_\_\_\_, as originally filed  
 pages \_\_\_\_\_, filed with the demand  
 pages \_\_\_\_\_, filed with the letter of \_\_\_\_\_

### 2. With regard to the language, all the elements marked above were available or furnished to this Authority in the language in which the international application was filed, unless otherwise indicated under this item. These elements were available or furnished to this Authority in the following language \_\_\_\_\_ which is:

- ☐ the language of a translation furnished for the purposes of international search (under Rule 23.1(b)).
- ☐ the language of publication of the international application (under Rule 48.3(b)).
- ☐ the language of the translation furnished for the purposes of international preliminary examination (under Rule 55.2 and/or 55.3).

### 3. With regard to any nucleotide and/or amino acid sequence disclosed in the international application, the international preliminary examination was carried out on the basis of the sequence listing:

- ☐ contained in the international application in written form.
- ☐ filed together with the international application in computer readable form.
- ☐ furnished subsequently to this Authority in written form.
- ☐ furnished subsequently to this Authority in computer readable form.
- ☐ The statement that the subsequently furnished written sequence listing does not go beyond the disclosure in the international application as filed has been furnished.
- ☐ The statement that the information recorded in computer readable form is identical to the written sequence listing has been furnished.

### 4. ☐ The amendments have resulted in the cancellation of:

- ☐ the description, pages \_\_\_\_\_
- ☐ the claims, Nos. \_\_\_\_\_
- ☐ the drawings, sheets/fig \_\_\_\_\_

### 5. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).\*\*

\* Replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report since they do not contain amendments (Rule 70.16 and 70.17).

\*\* Any replacement sheet containing such amendments must be referred to under item 1 and annexed to this report.

# INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International Application No.  
PCT/FR 03/03816

## V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

### 1. Statement

Novelty (N)	Claims		YES
	Claims	1, 6, 7, 12	NO
Inventive step (IS)	Claims		YES
	Claims	1-12	NO
Industrial applicability (IA)	Claims	1-12	YES
	Claims		NO

### 2. Citations and explanations

1) Reference is made to the following document:

D1: EP-A-0894774  
D2: EP-A-0548971  
D3: EP-A-0488048  
D4: EP-A-0304234  
D5: EP-A-0751099

2) PCT Article 33(2):

The following documents disclose a layer system having low emissivity and with a thermal insulation function and/or systems of this type providing solar protection, characterized by at least one functional layer (Ag) and at least one mixed oxide layer (low E film) comprising:

in D1 (page 2, lines 29 to 39 and 54 to 58; claims 1 to 11) ZnO comprising Ga or Al, or comprising Zn<sub>2</sub>TiO<sub>4</sub>;

in D2 (page 5, lines 4 to 25, table 4; examples 1 to 3; claims 1, 6, 7, 14) ZnO comprising Ti and Ga;

in D3 (page 7, lines 7 to 22; claims 1 to 7).

Claims 1, 6, 7 and 12 do not meet the requirements of PCT Article 33(2).



## 3) Inventive step

D4 (page 2, line 34, to page 3, line 49; page 4, lines 3 to 7; claims 1 to 10) ZnO comprising Ti in the form of  $\text{Zn}_2\text{TiO}_4$ .

The subject matter of claim 1 of the present application therefore differs from D4 in that it contains additional oxides ( $\text{Al}_2\text{O}_3$ ,  $\text{Ga}_2\text{O}_3$ ,  $\text{Sb}_2\text{O}_3$ ).

Layer systems comprising  $\text{ZnO}_2$  in conjunction with Al, Ga and/or Ti are disclosed in D5 (page 3, lines 18 to 19; page 4, lines 31 to 50; page 5, lines 40 to 41; claims 1 to 11).

A person skilled in the art wishing to increase the capacity for mechanical and chemical resistance of layer systems having low emissivity would consider the subject matter and above all the compositions of the layers known from D4 and D5 (as well as D1 to D3).

In light of D1 to D5, this feature - additional oxides ( $\text{Al}_2\text{O}_3$ ,  $\text{Ga}_2\text{O}_3$ ,  $\text{Sb}_2\text{O}_3$ ) - is only one of several obvious possibilities from which a person skilled in the art might choose, according to the circumstances, in order to solve the problem of interest, without thereby being inventive.

Consequently claim 1 does not involve an inventive step (PCT Article 33(3)).

Claims 2 to 11, which are dependent on claim 1, and claim 12 also do not meet the PCT inventive step requirements.

## 4) PCT Article 6

It is clear from pages 3 to 5 of the description (basic object of the invention) that the following features are essential for defining the invention (hardness, chemical resistance, avoidance of problems during the Zn-Ti alloy sputtering process):

The layer system for transparent substrates according to the claim does not contain the following essential features:

- the composition of the functional layer;
- the composition and ratio of ZnO/TiO<sub>2</sub> in the mixed oxide layer;
- the composition and proportion of oxides Al<sub>2</sub>O<sub>3</sub>, Ga<sub>2</sub>O<sub>3</sub> and/or Sb<sub>2</sub>O<sub>3</sub> in the additional oxide layer;
- the layer structure;
- the layer thickness;
- the composition of the metal target alloy.

Since independent claim 1 does not contain these features, it does not meet the requirement of PCT Article 6 in conjunction with PCT Rule 6.3(b), whereby an independent claim should contain all the technical features essential for defining the invention.